DESCRIPTION AND RATING

PENTODE GL-5899

FIVE-STAR TUBE
★ ★ ★ ★ ★

The GL-5899 is a subminiature semi-remote-cutoff pentode intended for use as a wide-band, high-frequency amplifier. Its semi-remote-cutoff characteristic makes it suitable for use in circuits to which it is desired to apply automatic-gain-control. This tube is designed for service under severe conditions of mechanical shock and mechanical vibration, and where high ambient temperatures will be encountered. The tube is especially suited for compact military applications because of its dependable performance, stable operating characteristics, and small size.

TECHNICAL INFORMATION

GENERAL

Electrical

Cathode - Coated Unipotential

Heater Voltage (A-c or D-c*)		6.3 ± 5%	Volts
Heater Current		0.15	Ampere
Direct Interelectrode Capacitances	With Shield†	Without Shield	
Grid-No. 1 to Plate, maximum	0.015	0.03	uuf
Input	4.2	4.0	uuf
Output	3.4	1.9	uuf

Mechanical

Mounting Position - Any
Envelope - T-3, Glass
Base - E8-10, Subminiature Button 8-Lead

MAXIMUM RATINGS

Electrical - Absolute Maximum Values

Plate Voltage	165	Volts
Screen Voltage	155	Volts
Negative D-c Grid-No. 1 Voltage	55	Volts
Plate Dissipation	1.1	Watts
Screen Dissipation	0.55	Watt
D-c Cathode Current	16.5	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	200	Volts
Heater Negative with Respect to Cathode	200	Volts

Mechanical

Peak Impact Acceleration ‡	450	G
Uniform Acceleration §	1000	G
Vibrational Acceleration π	2.5	G
Bulb Temperature at Hottest Point Δ	+250	Centigrade

CHARACTERISTICS AND TYPICAL OPERATION

Class A_1 Amplifier

Plate Voltage	100	Volts
Screen Voltage	100	Volts
Cathode-bias Resistor	120	Ohms
Plate Resistance, approximate	0.26	Megohm
Transconductance	4500	Micromhos
Plate Current	7.2	Milliamperes
Screen Current	2.0	Milliamperes
Grid-No. 1 Voltage, approximate		
Gm = 25 Micromhos	-14	Volts
Maximum Noise Output Voltage ◊	0.060	Volts
Life Expectancy		
For Ambient Temperature = +30 C	5000	Hours
For Ambient Temperature = +175 C	1000	Hours

* Tube life and reliability of performance are directly related to the degree of regulation of the heater voltage to its center-rated value of 6.3 volts.

† With external shield of 0.405-inch inside diameter connected to cathode.

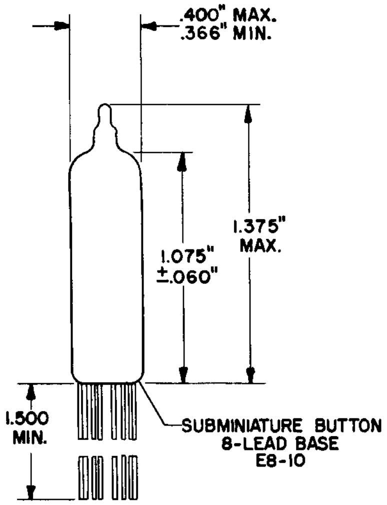
‡ Forces in any direction as applied by the Navy-type, High Impact (flyweight) Shock Machine for Electronic Devices or its equivalent.

§ Forces in any direction applied gradually as in a centrifuge.

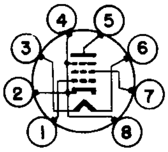
π Vibrational forces in any direction for a period of at least 100 hours at a frequency of 60 cycles per second.

Δ The indicated maximum bulb temperature rating should never be exceeded under any circumstances. Tube life and reliability of performance will be enhanced by operation at lower temperatures.

◊ Across a plate load resistor of 10,000 ohms with an applied vibrational acceleration of 15 G at a frequency of 40 cycles per second.

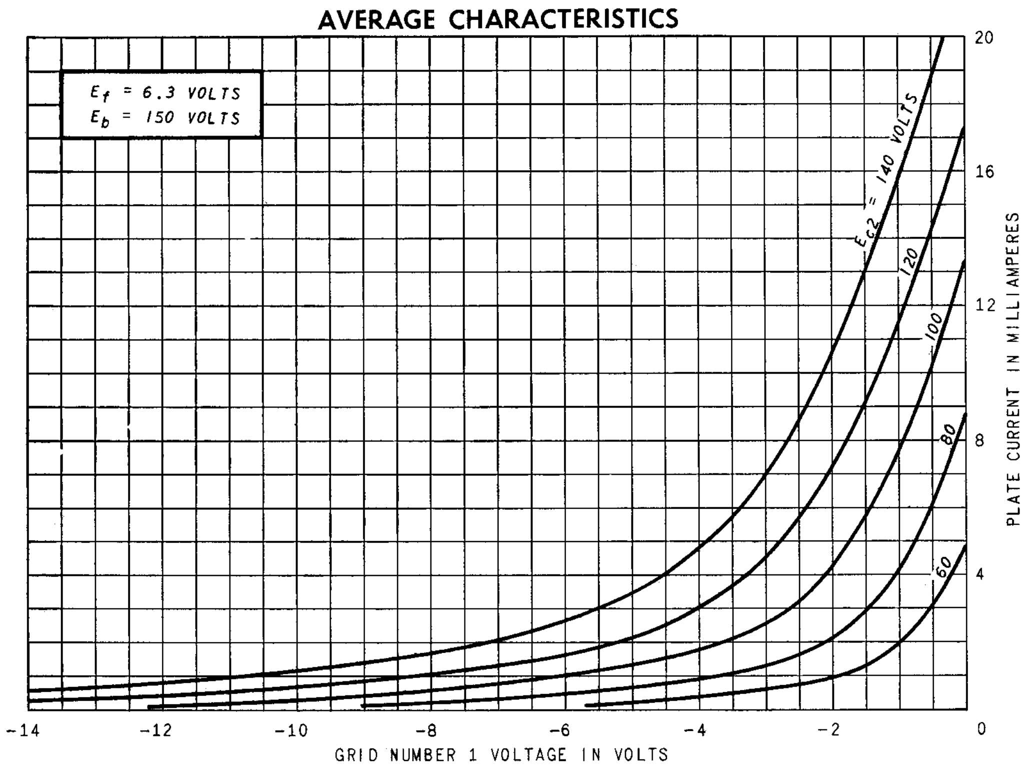


BASING DIAGRAM

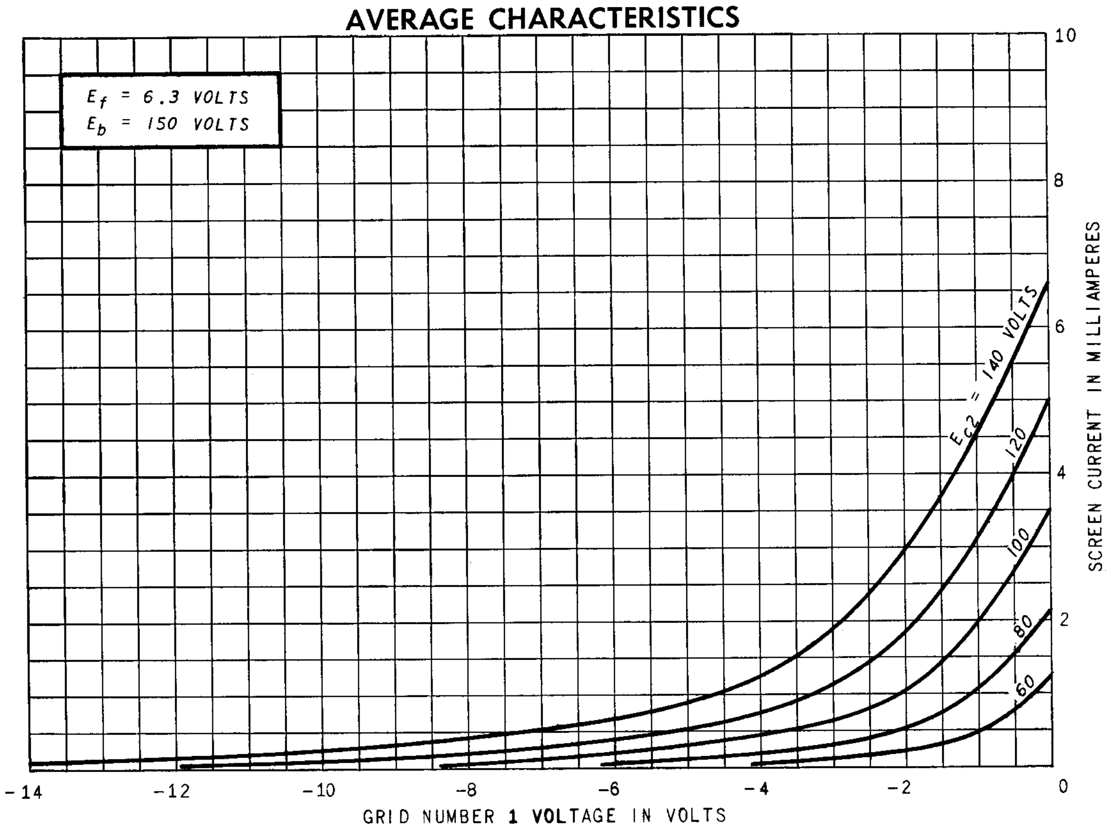


8DL
(BOTTOM VIEW)

LEAD 1: - GRID NUMBER 1
LEAD 2: - CATHODE AND GRID NUMBER 3
LEAD 3: - HEATER
LEAD 4: - CATHODE AND GRID NUMBER 3
LEAD 5: - PLATE
LEAD 6: - HEATER
LEAD 7: - GRID NUMBER 2 (SCREEN)
LEAD 8: - CATHODE AND GRID NUMBER 3

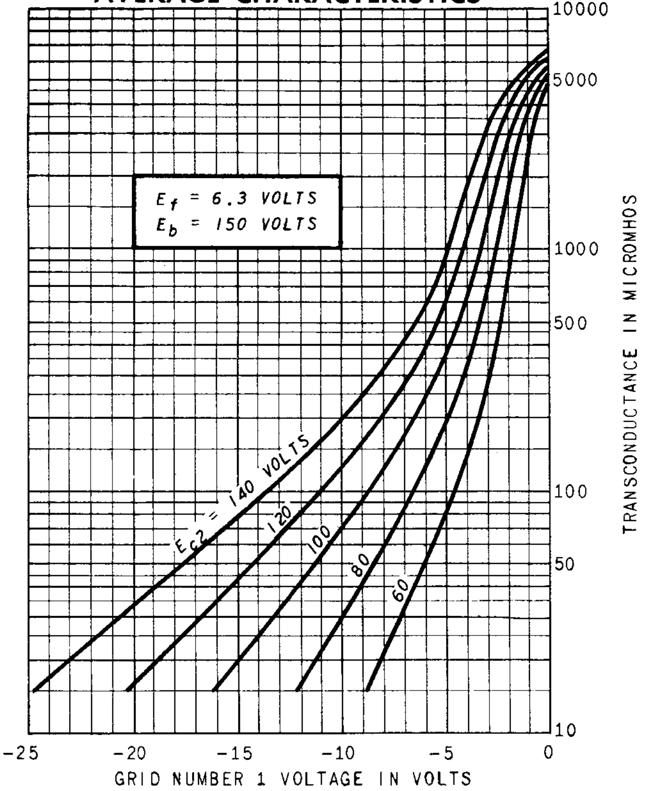


April 3, 1953



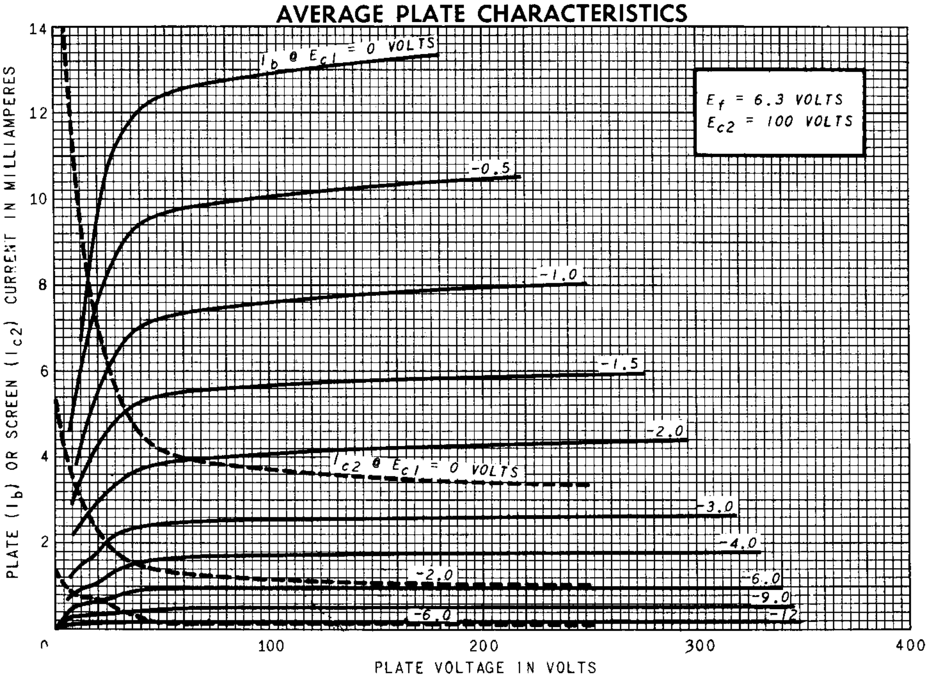
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AVERAGE CHARACTERISTICS



April 3, 1953

AVERAGE PLATE CHARACTERISTICS



April 3, 1953

TUBE DEPARTMENT

GENERAL ELECTRIC

Schenectady 5, N. Y.

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